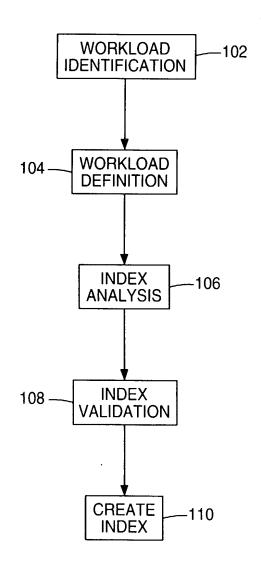
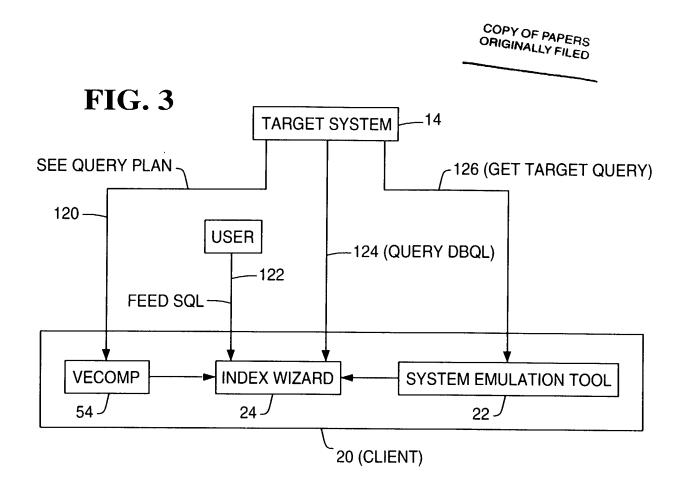
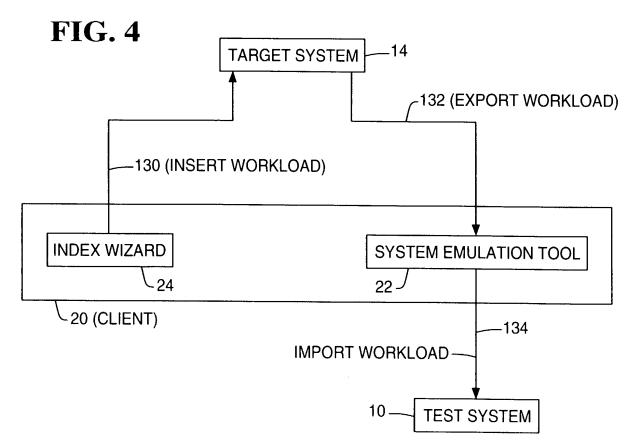


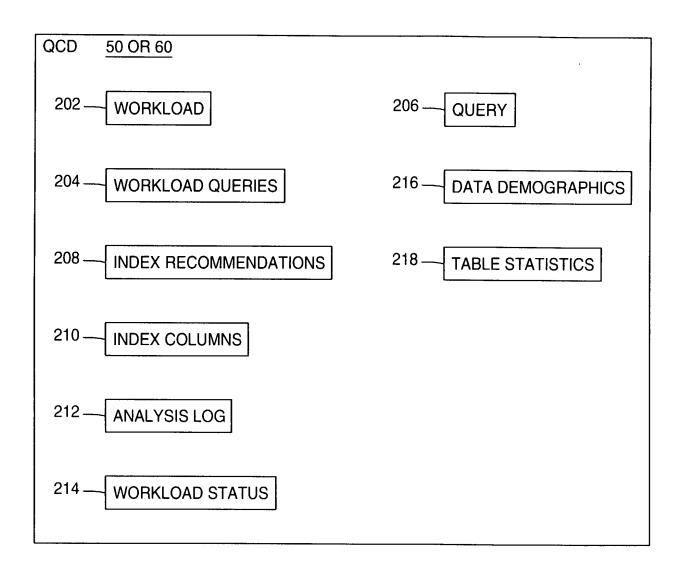
.0

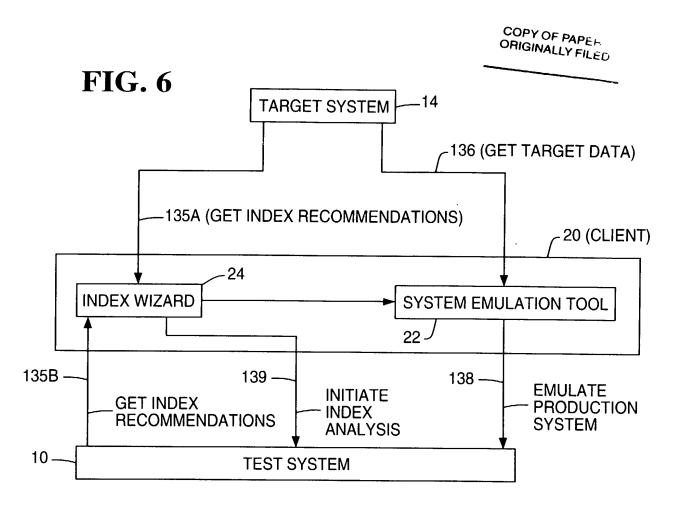
COPY OF PAPE: ORIGINALLY FILED

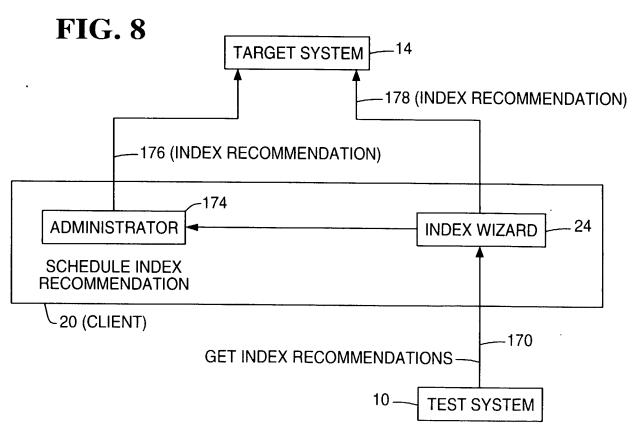


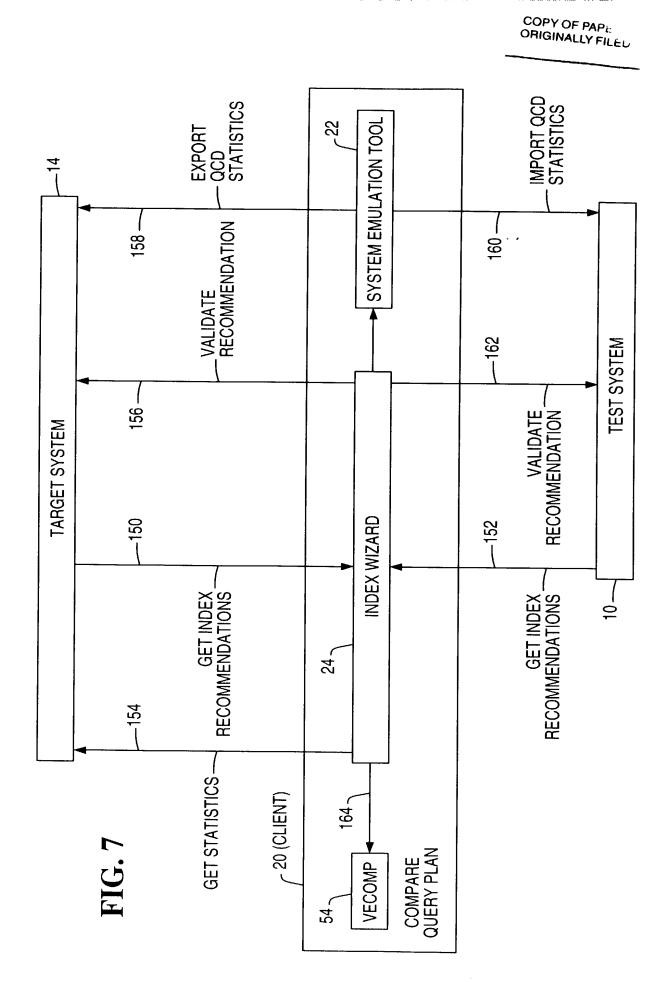






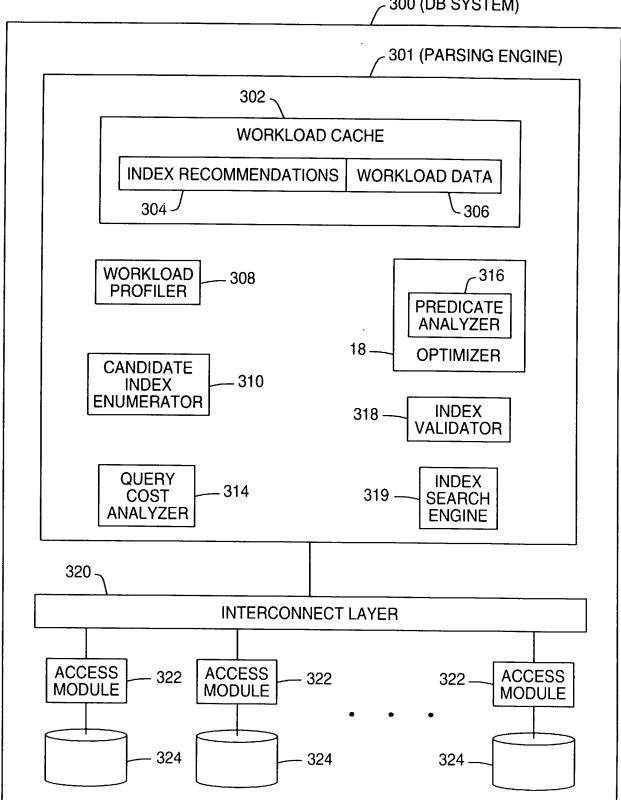




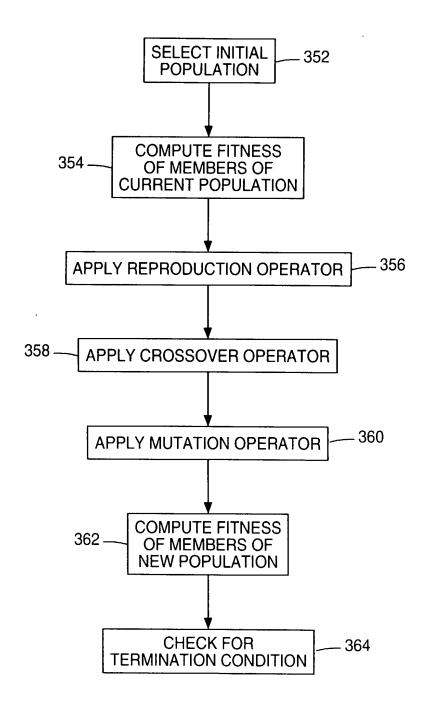




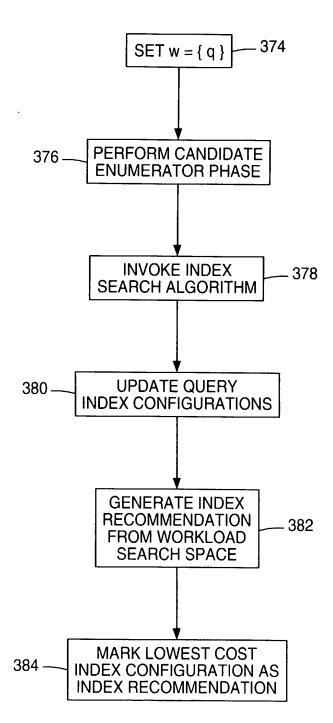
300 (DB SYSTEM)



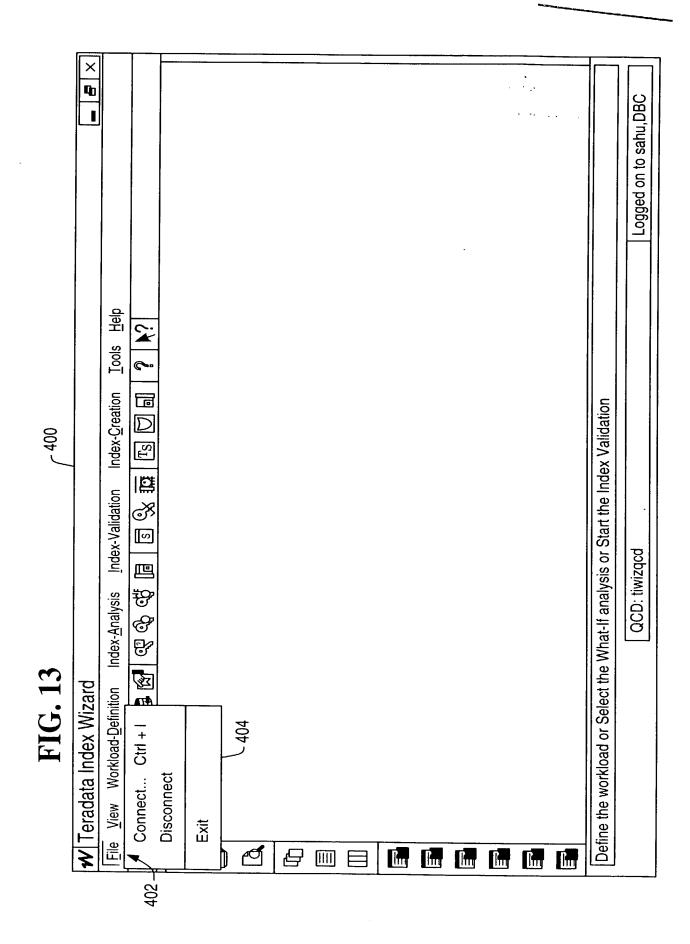








q Not Logged on Heb 2 Tools Index-Creation $^{\mathrm{LS}}$ Index-Validation Š S 凹 ₩. Index-Analysis F File View Workload-Definition Teradata Index Wizard **O**## ⑦ 0 ldle <u>liu</u> lin liu Cin



Đ Logged on to sahu, DBC 움 Tools QCD: tiwizgcd, WORKLOAD; myworkload Index-Creation G \square 400 $\mathbf{I}_{\mathbf{S}}$ Index-Validation Index Recommendations Report Š Data Capacity Analysis Report Update Cost Analysis Report Query Cost Analysis Report Start the Index Validation or Apply the Recommendations ဟ Workload Analysis Report **Existing Indexes Report** Table Analysis Report 凹 Table Scan Report Summary Report S Index-Analysis 망 중 FIG. 14 **₹** W Teradata Index Wizard View Workload-Definition Displays the summary report Summary Info... Status bar Reports ✓ Toolbar 412--Elle 1 8 410-

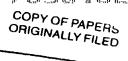
FIG. 15															Not Logged on
400		Index-Validation Index-Creation Tools Help									•				
420	Teradata Index Wizard	Index- <u>A</u> nalysis	② ② □ ② □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	Statement Text		Existing Workload	CD 422						E	⊕	Selects the statements from the Database Query Log

	× 60 •															Logged on to sahu,DBC
																Logic
C 400		Index-Creation Tools Help														.OAD; myworkload
430		Index-Analysis Index-Validation II	New Analysis	Restart Analysis	What-If Analysis	432									e Recommendations	dCD: tiwizqcd, WORKLOAD; myworkload
FIG. 16	Teradata Index Wizard	View Workload-Definition		<u> </u>											Start the Index Validation or Apply the Recommendations	Start a What-If analysis of the workload
	*	Elle		Q	100	<u> </u>	3	∃ [<u>lin</u>	Îш	Î		<u>lin</u>	日命	Sţ.	Star

	× Q D							-		· - · · · · · · · · · · · · · · · · · ·				
														Not Logged on
7 400		Index-Creation Tools Help												
440		Index-Validation	Validation	742	ļ.									
FIG. 17	Teradata Index Wizard	View Workload-Definition Index-Analysis	第 □ ■ ■ 4 4 4	77										e indexes
	W Tera	File Vie	⑦			ď	В						日命	Validates the indexes

Q Not Logged on 452 Tools Help Apply Recommendations... Index-Validation... Index-Creation 450 IE Š ြလ 哩 Index-Analysis 137 **망** Saves and executes the recommendations **W** View Workload-Definition Teradata Index Wizard FIG. 18 **O**## ⑦ 틢 同 8 💷 🗏

		Ι	T	1					
	× •••				Preferences	Validation System	Index Analysis Inputs	464	Not Logged on
460		Tools Help	Define Data Source	Teradata <u>S</u> ystem Emulation Tool Teradata <u>V</u> isual Explain <u>T</u> eardata Statistics Wizard	Options	Workload CleanUp	462		N
7 400		Index-Validation Index-Creation							
FIG. 19	lex Wizard	Workload-Definition Index-Analysis Index	四节分比 图 1 1 1 1						
FI	W Teradata Index Wizard	File View Worklo			ď	8			



	ICON	DESCRIPTION
800	II	TO LOGON TO THE TERADATA RDBMS SERVER
801—		TO LOG OFF FROM THE TERADATA RDBMS SERVER
802		TO SELECT THE STATEMENTS FROM THE DBQL
803 —		TO ENTER THE SQL STATEMENTS OR SELECT THEM FROM MORE THAN ONE FILE
804 —		TO SELECT THE SQL STATEMENTS FROM THE QCD
805 —		TO IMPORT A WORKLOAD FROM A PRODUCTION SYSTEM
806 —		TO SELECT AN EXISTING WORKLOAD
807 —	(F)	TO SET/RESET THE INDEX ANALYSIS PARAMETERS
808	Ð	TO START INDEX ANALYSIS
809 —	₫	TO PERFORM "WHAT-IF" ANALYSIS
810—		TO RESTART INDEX ANALYSIS FROM A CHECKPOINT
811	S	TO DISPLAY SUMMARY INFORMATION
812	Ŷ.	TO VALIDATE THE INDEXES
813		TO SCHEDULE THE CREATION OF INDEXES
814_	?	TO VIEW THE HELP CONTENTS
815	\ ?	TO GUIDE THE USER HOW TO USE HELP

500	
Define Workload ?	
DBQL Search Criteria User Name: Start Time: End Time: End Time: Frequency: Statement Text:	
DBQL Statements Selected Frequency Statement Text	1
OK Cancel	_



-510 Define Workload SQL Statements sel * from dbc.dbcinfotbl; 512 J 1 Frequency: <u>A</u>dd **Browse** 513 -Selected Statements Workload Name: MyWorkload 514 Frequency Statement Text sel * from dbc.dbcinfotbl; Remove OK Cancel

FIG. 23

520 **Define Workload** ? X QCD Statements QCD Name: Query Id: Query Tag: 522 524 **TIWizQCD** Browse QCD Selec Query Frequ Statement Text 19 Insert explain into tiwizqcd sel * from query,rela 1 17 1 Insert explain into tiwizqcd sel * from query;;; 1 15 sel * from query,relation where query.queryid = 1 13 sel * from query,relation ,workload;;; 1 32 sel * from query, relation where relation. relation 1 11 sel * from query, relation where query. query id : 9 1 sel * from query, relation, workload where quer 30 1 sel * from query;;; Insert explain into TIWizQCD sel * from relatio ▼ 1 28 MyWorkload Workload Name: Select All Deselect All OK Cancel

> டி migrat31 டி migrat40 டி migrat41 டி migrat42

> > 面 dropdb 面 migrat10 面 migrat11 面 migrat20 面 migrat21

Look in: Sql

Open

ய createdb **ப் createtb**

~

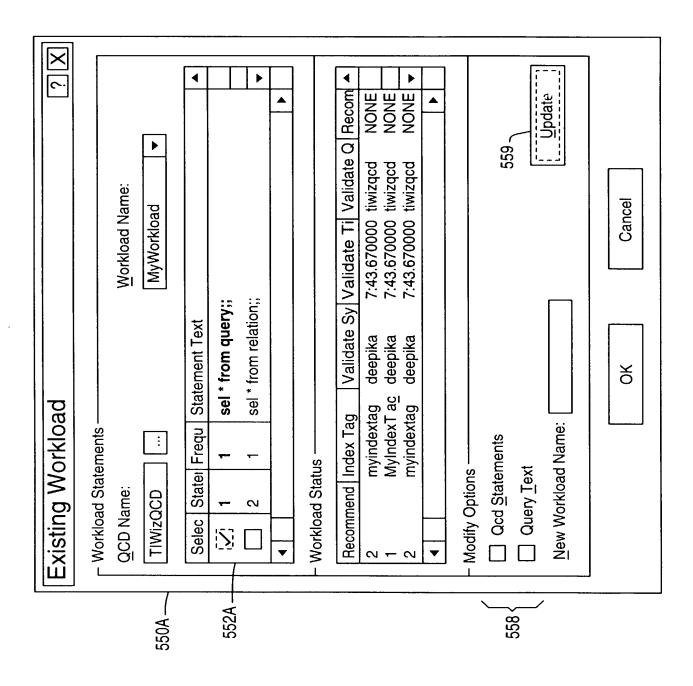
Cancel Open SQL Files (*.sql) createtb Files of type: File Name:



540 **Define Workload** ? X Select SQL Statements -542 Selected Frequency **Statement Text** 1 SELECT DISTINCT t_2.t_2_c_2- t_ SELECT NULLIF (t_4.t_4_c_3 1 1 DELETE FROM t_4 WHERE NO DELETE t_1 WHERE NULLIF (t_1 1 INSERT INTO t_2 (t_2.t_2_c_1 , t_2. 1 1 **UPDATE** t_1 **FROM** t_5, t_2, t_3 **SET** • **>** MyWorkload Workload Name: Select All Deselect All Cancel OK

FIG. 26

			550					
xistir	ng W	orkload					Ľ	?][
- Worklo	ad Stat	tements						
QCD N	lame:			Workload N	lame:			
TIWiz	QCD		C 552	MyWorkloa	ad •	•		
State	Frequ	Statement T	ext					•
1	1	sel * from qu	uery;;					
2	1	sel * from re	lation;;				İ	•
4							•	
Recom 2		myindextag	deepika	Validate Ti 7:43.670000	tiwizqcd	Red NO	-	
1 .			•					
1 '		MyIndexT ac	deepika	7:43.670000	•	NO		
2		MyIndex I a <u>c</u> myindextag	deepika deepika	7:43.670000 7:43.670000	•	NO NO	NE	•
2		myindextag	•		•			V
2 ◀ Modify		myindextag s	•		•		NE	▼
2 - Modify	Option	myindextag s s ements	•	7:43.670000	•	NO	NE	•
2 - Modify	Option	myindextag s s ements	•	7:43.670000	tiwizqcd	NO	NE	▼



	560
Index Analysis Parameters	? ×
Index Analysis Inputs Keep existing indexes Maximum Columns per Index:	4
Maximum Indexes per Table:	16
Index Search Space:	256
Change Rate Threshold:	5
OK Set Defaults	Cancel



570 **Index Analysis** Workload Statements - 572 Statemment Id Frequency Statement Text sel * from query,relation where relation.relationid 3 1 sel * from query;; 2 1 sel * from relation;; Select Tables -Selected **Database Name** Table Name Access tiwizqcd **QUERY** 3 tiwizqcd **RELATION** 2 574 ~ Select All **Deselect All** - Restart Parameters Index Tag: MyIndexTag Checkpoint Frequency: Save Options - ☐ Save Recommendations in Files Save Exection Plans in Files Cancel



	580	
R	Restart Index Analysis	? X
	Restart parameters	
	QCD Name: TIWizQCD	
	Workload Name: MyWorkload	▼
	Index Tag: MyIndexTag	▼
	Save option ————————————————————————————————————	
	Save Recommendations	
	Save exection plans	
	OK Cancel	

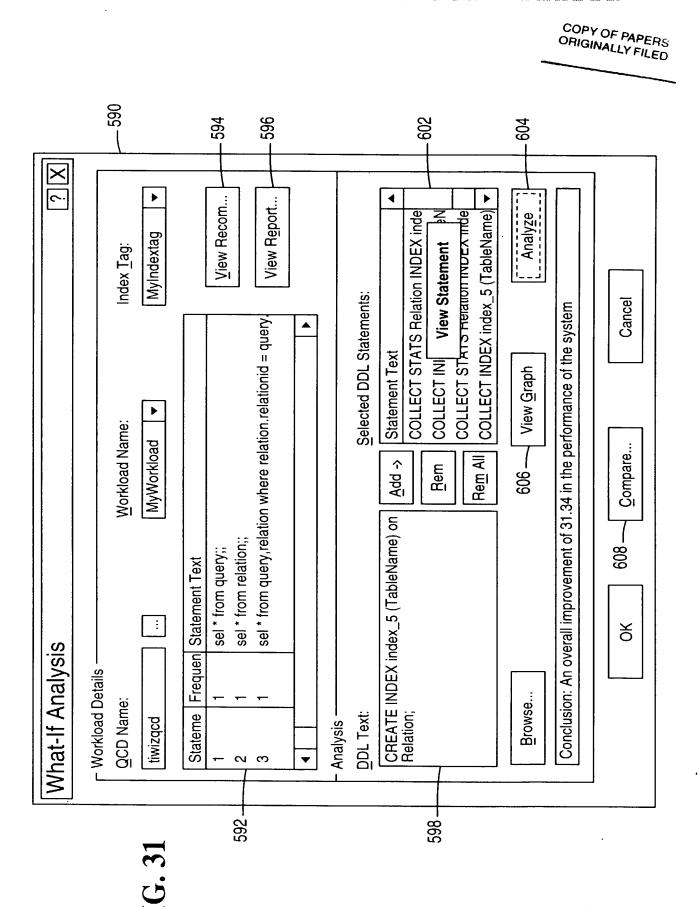
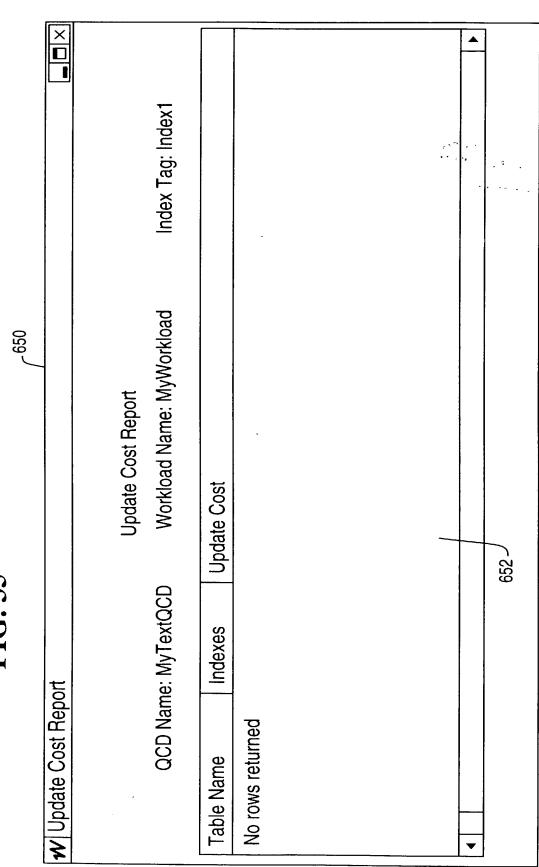


FIG. 3

	ביורוב) port Index Tag: myindextag	Index DDL Stats DDL	CREATE INDEX COLLECT STATS	CREATE INDEX COLLECT STATS	CREATE INDEX COLLECT STATS				
	nendation Reg myworkload	Time Esti	59.00	29.00	29.00				
	Index Recommendation Report Workload Name: myworkload	Size(KB)	10.00	10.00	10.00				
1000	Wo	Index T	ISI	ISI	ISI			622	
n doitobacan	QCD Name: tiwizqcd	Index Tag	MyIndextag	MyIndextag	MyIndextag				
14/ Index Documentation Day		Table Name	QUERY	RELATION	RELATION		▼		

	×						
			Index Tag: MyIndexTag	Columns	QueryID RelationKey	•••	
630		Existing Indexes Report	Workload Name: myworkload	Index Type Co	о В		632 /
, 511 , 511	exes Report		QCD Name: TIWizQCD	Index Name	PK_QueryID PK_RelationKey		
	W Existing Indexes Report		QCD	Table Name	QUERY		

						 			
×	Index Tag: MyIndexTag	Query Text	sel * from query,relation w	sel * from query;;	sel * from relation;;		•	•	
		Percentage Cha	100.00	100.00	100.00				
	Query Cost Analysis Report Workload Name: myworkload	Cost(with recommended	50.00	20.00	50.00				642
W Query Cost Analysis Report	QCD Name: TIWizQCD	Cost(with existing i	100.00	100.00	100.00				•
W Query Cos	Ö	Query Type	SELECT	SELECT	SELECT			•	-



× Size(KB) Index Tag: MyIndexTag 10.00 10.00 10.00 Disk Space Analysis Report Workload Name: myworkload MyIndextag MyIndextag MyIndextag Index Name 662-QCD Name: TIWizQCD Disk Space Analysis Report Table Name RELATION RELATION QUERY

FIG. 36

999

✓ Table Usage Report	Beport -		×
QCD N	QCD Name: TIWizQCD	Table Usage Report Workload Name: myworkload Index Tag: MyIndexTag	
Table Name	Access Count	Statement Text	
QUERY	τ,	sel * from query,relation where relation.relationid = query.queryid and query.qu	query.qu
KELATION QUERY	-	sel * from query,relation where relation.relationid = query.queryid and query.qu sel * from query;;	query.qu
RELATION	·	sel * from relation;;	
•			•
		672	

FIG. 3

Summary Report ACD Name: TIWizQCD Workload Name: myworkload Index Tag: MyIndexTag Morkload Name: myworkload Index Tag: MyIndexTag Stats DDL ERY MyIndextag CREATE INDEX index_4 (name) on Relation; COLLECT STATS Relation I COLLECT STATS Relation I MyIndextag CREATE INDEX index_4 (name, TableName) o COLLECT STATS Relation I ERY MyIndextag CREATE INDEX index_4 (name, TableName) o COLLECT STATS Relation I							_	
Summary Report Summary Report Ex Name Index DDL Indextag CREATE INDEX index_4 (name) on Relation; Indextag CREATE INDEX index_4 (name, TableName) Application	× .	x Tag: MyIndexTag	Stats DDL	COLLECT STATS Query IND COLLECT STATS Relation I	COLLECT STATS Relation I			
ummary Report QCD Name: TIWizQC BRY MyIndextag LATION MyIndextag		Summary Report Workload Name: myworkload	Index DDL	CREATE INDEX index_3 (QueryText) on Query; CREATE INDEX index_4 (name) on Relation;	CREATE INDEX index_4 (name,TableName) o			692
ummary R QCD ERY LATION LATION	eport	Name: TIWizQC	Index Name	MyIndextag MyIndextag	MyIndextag	:		
RE GO Tab	W Summary Report	QCD	Table Name	QUERY RELATION	RELATION		~	

	X					dne	ere		dne	ere		ere					<u> </u>	
0				nyworkload	Statement Text	sel * from query,relation where query.que	sel * from query, relation, workload where	sel * from query, relation, workload;;	sel * from query,relation where query.que	sel * from query,relation,workload ⊍/here	sel * from query,relation,workload;;	sel * from query, relation, workload where	sel * from query,relation,workload;;	•		-		
J 200		-	ŧ	Workload Name: myworkload	Geograph	built locally	built locally	built locally	built locally	built locally	built locally	built locally	built locally					
·			Table Scan Report	Name: tiwizqcd	AMPs Retrieves	All AMP Retrieve	All AMP Retrieve	All AMP Retrieve	All AMP Retrieve	All AMP Retrieve	All AMP Retrieve	Single AMP Retr	All AMP Retrieve		-			702
FIG. 40				QCD Name:	Cardinality	45.00	45.00	45.00	282.00	282.00	282.00	2.00	2.00					
-	Table Scan Report				Table Name	QUERY	QUERY	QUERY	RELATION	RELATION	RELATION	WORKLOAD	WORKLOAD					
	W Table 5			,	Owner	tiwizqcd	tiwizqcq	tiwizqcd	tiwizqcd	tiwizqcd	tiwizqcd	tiwizqcd	tiwizqcd				•	



-710 Workload Clean Up ? X Workload Statements -QCD Name: Workload Name: **TIWizQCD** MyWorkload 712 State | Frequ | Statement Text sel * from query;; 1 1 2 1 sel * from relation;; Workload Status 714 Selec Recommend Index Tag Validate Sy Validate Ti Validate Q 7:43.670000 tiwizqcd 2 deepika myindextag 1 MyIndexT ac deepika 7:43.670000 tiwizgcd 7:43.670000 tiwizqcd 2 myindextag deepika Delete Options -Delete Workload ✓ Delete Analysis Delete Plans Delete OK Cancel



Load Recommendations

• Load Recommendations from QCD

• Load Recommendations from file

TIWizQCD,MyWorkload

Tok

Tok

Cancel

FIG. 43

Load Recommendations Details ? X

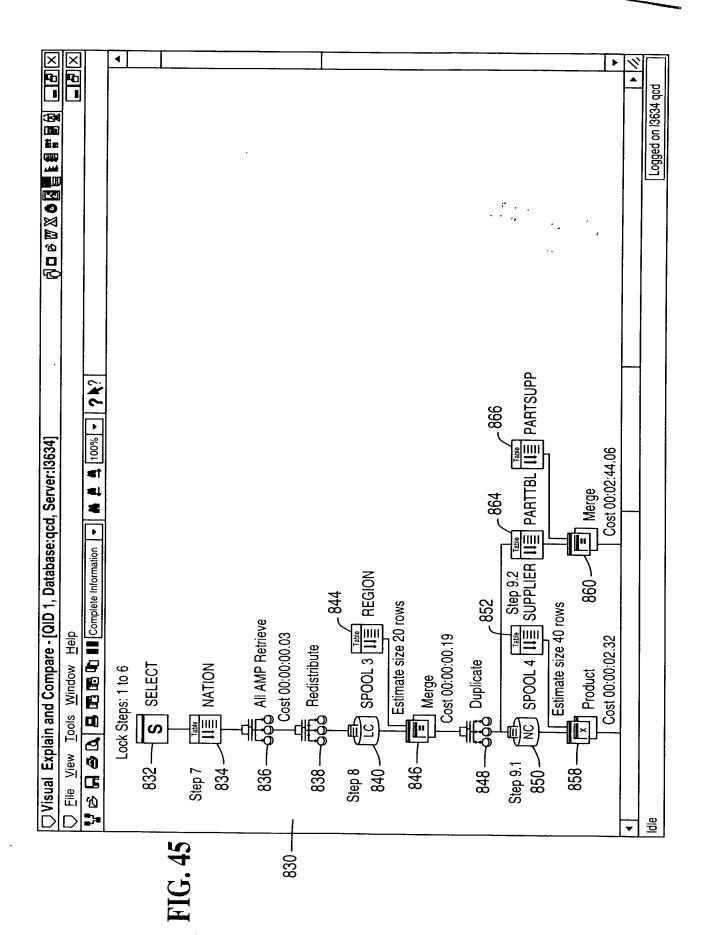
QCD Name: TIWizQCD

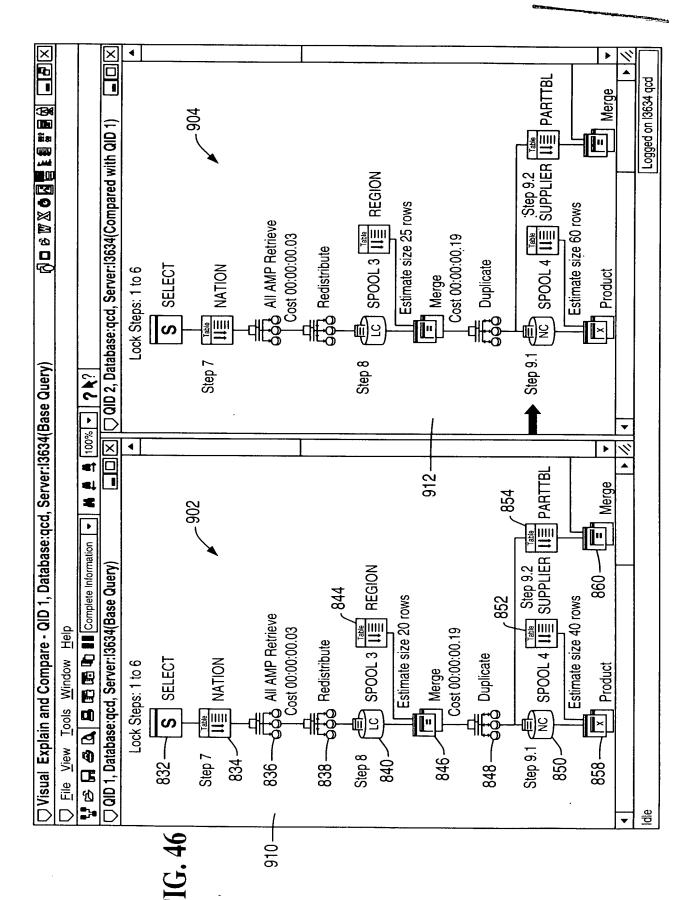
Workload Name: MyWorkload ▼

Index Tag: myindextag ▼

742 OK Cancel

Γ						/50 ·	1,	
Ind	ex Vali	<u>dation</u>						_
Г	Validat	e Indexe	es ——					
	Select <u>i</u>	ndexes t	o be vali	dated:	√ ⁷⁵²	✓ Validate on a	another system	ŀ
	Sele	Table	Index	Index	Columns	Index DDL		A
	[2]	QUER	MyInd		Query Text	CREATE INDEX in	ndex_3 (Query T	
	[<u>\}</u>]	RELA	MyInd		name	CREATE INDEX in	ndex_4 (name) o	
	[<u>\S</u>]	RELA	MyInd		TableName	CREATE INDEX in	ndex_4 (name T	▼
	4						•	
	Sele	ect All	Ī	Deselect	All	iew DDL	<u> V</u> alidate	
-	Validati	ion Resu	ults ——		75	 	756 J	
		T		To	/ O l	758		
	QUE		Index Na			vhich statistics w	ere collected	
		TION			0			
	RELA				Ö			
	4			-			•	
	Concl	usion: A	n overall	improven	nent of 38.24 i	n the performand	ce of the syste	m
	Compa	are Opti	ons: Co	ompare o	n same syste	m 🔻	View Grap	ph
			ОК		Compare	Cance	76	 -
					762	2		





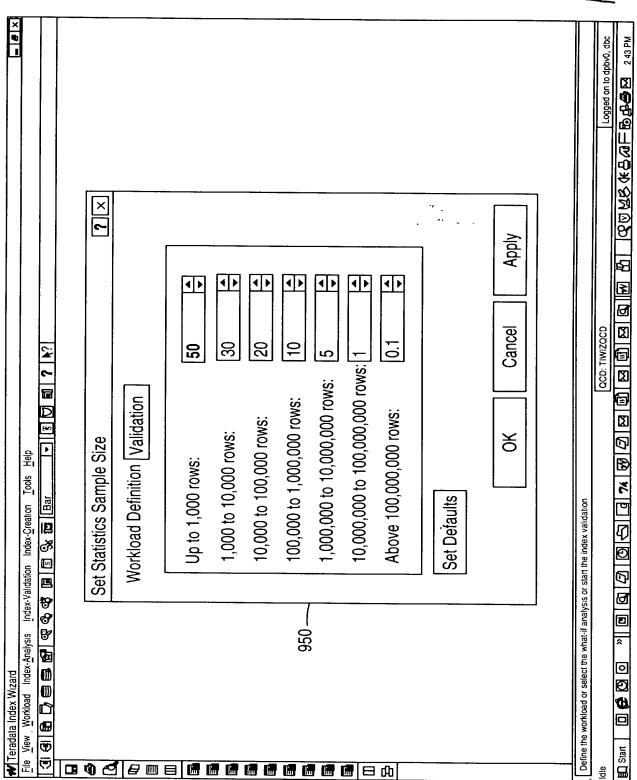


FIG. 47

ij